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(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2003/0028839 A1****Coene et al.**(43) **Pub. Date:****Feb. 6, 2003**(54) **METHODS AND DEVICES FOR
CONVERTING AS WELL AS DECODING A
STREAM OF DATA BITS, SIGNAL AND
RECORD CARRIER****Publication Classification**(51) **Int. Cl.⁷** **H03M 13/00**(52) **U.S. Cl.** **714/758**(76) **Inventors:** **Willem Marie Julia Marcel Coene,**
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(57) **ABSTRACT**

The invention relates to methods and devices for converting a stream of data bits of a binary information signal 2 into a stream of data bits of a constrained binary channel signal 3 using multiple channel codes C_{st} , C_{pc} . Apart from a standard code C_{st} , that is designed for a high coding rate, a parity-check enabling code C_{pc} is used that allows realization of a certain, predefined parity-check constraint imposed on the constrained binary channel signal 3. This parity-check constraint is related to a predetermined error event of the channel. The amount of use of the parity-check enabling code C_{pc} is dependent on the need for preventing the certain error event. Also another channel code C_{sub} can be used in this method in order to realise DC-control.

The invention further relates to a corresponding signal, record carrier as well as a method and device for decoding.

